

REMARKS

At the outset the applicants wish to express their appreciation to the Examiner for the courteous and helpful telephone conference accorded applicants' attorney on March 23, 2004. By the present amendment, the applicants have cancelled claims 1 and 3 and added new claims 11 and 12. New claim 11 is directed to a mixture of a biocide and carbon dioxide wherein the biocide is selected from the group consisting of chlorine gas, alkali metal hypochlorite, alkaline earth metal hypochlorite and combinations thereof. New Claim 12 specifies that the alkali metal hypochlorite and the alkaline earth metal hypochlorite are sodium hypochlorite and calcium hypochlorite. Basically, these new claims were discussed with the Examiner during the course of the interview except that the applicants believe that the more generic terms alkali metal hypochlorite and alkaline earth metal hypochlorite should be used in the broader claim.

In the Office Action of November 18, 2003 the Examiner rejected the claims under 35 U.S.C. 103(a) as being obvious over U.S. Patent No 5,031,252 to Oyama, in view of U.S. Patent No. 4,084,747, to Alliger.

The Examiner maintains that "Oyama has all the features of the claimed invention except that the disinfectants are selected from chlorine gas." While the Examiner is correct that the disinfectants disclosed by Oyama do not include chlorine gas, it is incorrect to state that Oyama otherwise discloses all the features of the claimed invention. The mixture utilized in Oyama is .1 to 2% benzalkonium chloride and 98 to 99.9% ethanol (utilized as a

solvent), (Patent, Column 4, lines 1 through 4). The ethanol in Oyama is in effect the propellant therein whereas in the present invention, carbon dioxide is the only propellant used. There is no disclosure of nor any mention whatsoever of carbon dioxide in Oyama. The Examiner further states that Alliger discloses that it is known in the dispensing art to use chlorine as a disinfectant and that combining the teachings of Oyama and Alliger renders obvious the present invention.

It is the applicant's contention that combining the teachings of Oyama and Alliger at most results in a mixture of ethanol and chlorine not carbon dioxide and chlorine.

In addition, the Alliger reference relates to a germ killing composition produced by contacting an acid material, preferably consisting of 15% by weight of lactic acid, with sodium chlorite in aqueous media. The result is a mixture containing chloride dioxide, chlorous acid, lactic acid and sodium lactate. (Patent, Column 3, line 53 to Column 4, line 2). However, Alliger also points out that "the compositions should be used within a period of up to 48 hours" and, if not, the lactic acid and chlorite compounds should be isolated by separate packaging (Patent, Column 4, lines 7 through 10) and mixed at the time of use. This problem of the Alliger reference is overcome by the present invention since mixtures of chlorine gas or compounds able to develop active chlorine and carbon dioxide are stable and can be stored in a single container as clearly pointed out in the instant PCT published specification at page 7, lines 17 to 19. A further advantage of the present invention, as disclosed in the instant PCT

published specification at page 7, lines 7 to 16, is that lower concentrations of chlorine or chlorine developing agent can be used because carbon dioxide synergistically increases the disinfecting power of chlorine.

In view of the above, it is respectfully submitted that the claims remaining in the application, claims 4 to 12, are not rendered obvious by the combination of the Oyama and Alliger references, since no disclosure of carbon dioxide is found therein, and are not anticipated by either cited reference. Therefore, it is respectfully submitted that claims 4 to 12, are patentable and should be allowed. Such action is respectfully solicited.

Respectfully submitted,

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